

UTRICULARIA JAMESONIANA IN CULTIVATION

TRAVIS H. WYMAN • 4063 Indian Lakes Circle • Stone Mountain, GA 30083 • USA •  
twyman@emory.edu

SEBASTIAN VIEIRA • Cra 77 No. 39B 16 • Medellin • Columbia • csvieira@epm.net.co

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*Utricularia jamesoniana* belongs to the *Orchidioides* section of *Utricularia*, a group very popular and sought after by growers for their large orchid-like flowers. Among “Utric” fans there is a great desire to see the other species in this section become more common or successfully enter cultivation (see Figure 1). Despite this interest only one species, *U. alpina*, is commonly found in collections, although a few other species such as *U. asplundii* and *U. quelchii* are beginning to circulate.

In June of 2004, my coauthor (Sebastian Vieira) was kind enough to provide me (THW) with a number of *Utricularia jamesoniana* specimens (see Figure 2) from ‘Represa el Peñol,’ Antioquia, Colombia, 1900m a.s.l. *Utricularia jamesoniana* and *U. asplundii* are closely related and Taylor (1989) notes that plants intermediate in appearance between the two species can be found. However, Taylor believes the two species to be distinct and notes that the distinguishing characteristic between the two species is the length of the spur. As can be seen (Figure 5 and Front Cover) the spur from on these plants is significantly longer than the lower corolla lip, thereby confirming the identification of this plant as *U. jamesoniana*. By prior arrangement I distributed some of this material to other growers and also to the Atlanta Botanical Garden, in Georgia, USA. (Out of respect for the other growers’ privacy we will not disclose their names.) Three plants were allotted to me and in this article I will discuss the techniques I have used to cultivate them.

The *Utricularia* species in the section *Orchidioides* are often, mistakenly, referred to as the “epiphytic *Utricularia*.” This is inaccurate, because in truth most of the species from this section more often grow as terrestrials in habitat. My initial belief was that *U. jamesoniana* might be an exception to this, based upon Sebastian’s description of ‘Represa el Peñol.’ Sebastian had also located a second population at 1000m a.s.l. where the plants grew as epiphytes on tree trunks on the sides of a small river (see Figures 3, 4). The habitat looked dry but the air was very humid because of the river’s proximity. The plants grew on the sides of the tree trunks that faced toward the water. The plants and flowers of this lowland population appeared to be identical to the form provided to me. Sebastian’s description of the habitat for these plants corroborated Taylor’s (1989) description well, i.e. that the plant grows on:

...mossy tree trunks and branches in montane cloud forests or lowland rain forests from near sea level to 2500m altitude... From the information on collectors [sic] notes and my own personal experience in Panama and Ecuador this species almost invariably grows on trees from 1m to 5m or more above ground level.

I have observed significant stolon growth on all of my plants over the past six months. The nature of this growth initially led me to speculate that this plant is a true epiphyte. Despite vigorous growth the majority of the stolons produced by the plants run on or only just below the surface of the media; rarely do I find stolons descending deeper into the pots. By comparison I readily observe stolons growing out of the bottoms of all of my other *Orchidioides* pots, some potted up as recently as four months ago. In the case of one of the plants a stolon (10cm long) ran over the edge of the pot and is now creeping into the live *Sphagnum* in a neighboring pot of *U. reniformis*. This stolon was very thin and hair-like and stood 7cm in the air, branching every 1cm or so before toppling under its own weight. The portions that are in full contact with the live *Sphagnum* in the other pot are now visibly thicker and show signs of tuber and trap formation as

well as leaf growth. The portions of this stolon that are not in contact with any media remain hair-like. Similar runners (see Figure 1) are developing on my other plants though none are as substantial as the previously mentioned one. These stolons may be acting in a manner similar to the aerial stolons produced by plants like *U. nelumbifolia* and *U. humboldti*, allowing *U. jamesoniana* to scramble along and establish itself in mosses and detritus along branches. Given time, these plants may send runners throughout the surface of their pots and later develop into independent plants. My own observations along with those of Sebastian and Taylor led me to believe that *U. jamesoniana* is very likely a true epiphyte and that it rarely, if ever, grows terrestrially.

I planted the first of my three plants in a media that I use for all my *Orchidioides* section plants. This media consists of a 2-3cm layer of live long-fiber sphagnum moss overlaying an equal part mix of orchid bark, tree fern fiber and perlite or clay pellets. This combination of media has worked very well in the past and I believe that it closely mimics the conditions that an epiphyte would grow in. I potted the remaining two plants in different media based on information I had received from other growers on the media they prefer. The second medium was loosely packed long-fiber sphagnum moss while the final medium was an equal parts mix of peat and sand on top of which I placed a few strands of live *Sphagnum*. Sebastian has recently informed me that in July of 2004 his father found *U. jamesoniana* growing terrestrially on a rocky roadside bank at about 2000m elevation a.s.l. The soil profile consisted of a thin layer of earth covered with mosses and dripping water. These plants have particularly large, colourful flowers (see Front Cover and Figure 5). This finding confirms that there are indeed terrestrial forms of this species, or at least that the plant can grow terrestrially, and explains why the other media I had tried were ultimately successful. I have observed that plants in the long-fiber sphagnum and the plants in the peat and sand mix had a rapid decline after being kept very wet for ten days, so I do not recommend these media unless you can monitor the plants closely. Another soil mix configuration that seems to work well is to fill the pot half-way with fine grade pine bark, then top off the pot with a 50:50 mix of fine pine bark and long-fiber sphagnum, and add a final top dressing of live sphagnum. The plants establish quickly in this mix, seem more vigorous than in my other mixes, and the pot is less prone to being waterlogged.

Experience has taught me that *Orchidioides* plants must be grown in drained pots, as the presence of excess, stagnant water often results in the plants succumbing to rot. Orchid baskets and water lily-style net pots are excellent choices as they provide extra air circulation through the media. With extra attention to the moisture levels, regular pots can work fine as well. Given the diminutive size of *U. jamesoniana* I potted two of the plants in 10cm net pots and the third plant (that was in pure long-fiber sphagnum moss) in a standard 12cm square pot. While I am sure larger pots could be used I do not see that there would be any benefit from it. While I have yet to attempt it, I believe *U. jamesoniana* might also grow well mounted on a moss-covered slab of bark or branch.

Keep the media damp but not soaking wet. I top-water the pots and then leave them alone until the long-fiber sphagnum moss begins to look a little dry. I set the pots on Styrofoam blocks, thereby allowing the excess water to drain totally. By allowing water to drain into a tray, the local humidity level stays in the range of 50-90%, most often about 70%. I assume these plants can be conditioned to somewhat lower humidity levels but this should be done slowly as the leaves are very thin and would likely dry out rapidly.

Given the environment from which it originates, I believe that *U. jamesoniana* does not have a seasonal dormancy but is capable of going dormant when conditions become unfavorable (i.e. during drought.) My plants have not shown indications of dormancy but given the short period of time that I have been growing them I can not rule out the possibility that they have a dormant period. I assume a dormant state would be manifested by slowed growth, like that observed in the closely related *U. asplundii*. Should indications of dormancy occur, I would keep the media just damp enough to prevent the long-fiber sphagnum from becoming dry.

For lighting I using a pair of 120cm twin tube fluorescent fixtures hung 30cm above the plants. To provide a broad spectrum I have placed one "warm white" and one "Sunshine" bulb in each fixture. Some growers move their plants outdoor during good weather, and yet others grow theirs in sunlit greenhouses; in these situations it is probably best to protect the plant from



Figure 1: *Utricularia jamesoniana*, in cultivation in Georgia. The plant shown is potted in “epiphyte” mix. The “runner” stolon described in the text is quite obvious. Photograph by Travis Wyman.



Figure 2: A plant from El Peñol, 1900m. Photograph by Sebastian Vieira.





Figure 3: A cluster of epiphytic plants at 1000m. Photograph by Sebastian Vieira.

Figure 4: The habitat for plants at 1000m. Photograph by Sebastian Vieira.



Figure 5: A terrestrial plant from 2000m. Photograph by Sebastian Vieira.

direct sun. The leaves of this plant are very thin and delicate and I believe that prolonged direct sun light would likely burn them. When using sunlight, start with 30-50% shading but be ready to try more if the plant appears to need it.

It is important to maintain your plants in the appropriate temperature range. *Utricularia jamesoniana* grows under a broad range of conditions in the wild, from sea-level up to 2500m. The plants I have were collected at 1900m elevation, so I grow them with my highland *Nepenthes* and *Heliauphthora*. My growing area for high elevation plants is in the crawlspace under my house. During the summer, daytime temperatures are generally at a maximum of 28°C though more often they range from 23-25°C. At night the temperature usually drops to about 18-20°C. During the winter the temperature range tends to be about 10 degrees lower.

I have not yet begun propagation efforts but I assume that these plants are, like most other *Utricularia*, propagated most easily via division. My technique for dividing *Orchidioides* plants is to remove a sizable clump from the mother plant during active growth and pot it in new media. I ensure that, for both the division and the parent plant, the humidity is high and the media only moist (if the media is too wet I find that the cutting and the mother plant tend to succumb to rot.) Occasionally the division or mother plant may lose many or all of their leaves. When this occurs treat the pot as if the plant were actively growing because in many cases the plant is simply establishing itself. I often see *U. jamesoniana* plants produce long runner stolons. If these are commonplace with *U. jamesoniana* then separation of one of these after it has formed leaves of its own might provide a more simple method of division.

Seed is also a probable means of propagation in cultivation but I would assume that, like the seed from related *Utricularia*, it must be very fresh or it will likely not be viable. I suggest sowing on milled *Sphagnum* and keeping it moist and under conditions of high humidity and good light. One of us (SV) attempted cross pollinating *U. jamesoniana* but obtained little seed—the resulting seed capsules looked almost empty, unlike other *Orchidioides* section species that produce large fruit full of seed. The seed was sent to another grower but was lost in transit, so we do not know if it was viable. This is discouraging but I (THW) have had similar occurrences with *U. alpina* and these results may just be a matter of technique. Time will tell.

In summary, this plant is fairly simple to grow, rivaling *U. alpina* in its ease. The leaves on all three of my plants have at least tripled in size and there are 2-4 times as many as when I first potted the plants. Because this plant has only recently entered cultivation, we currently do not have enough specimens to share extensively. We are working to propagate it to send to highly experienced growers and our close trading partners. In a few years it should be more commonly available, or so we hope. But for now it, unfortunately, remains difficult to obtain. Should we obtain extra plants, we will announce it via the internet community.

#### References:

Taylor, P. 1989. The Genus *Utricularia*—A Taxonomic Monograph. Kew Bull. Additional Ser XIV: 407 and 422-424.



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